

Notice of Allowability

Application No.

10/648,829

Examiner

Melissa J Koval

Applicant(s)

KIM ET AL.

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the communication of 8/27/2003.
2. ☒ The allowed claim(s) is/are 1-7 and 9-19.
3. ☒ The drawings filed on 27 August 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Paul Bobowiec on August 27, 2004.

The application has been amended as follows:

In the Claims:

Cancel claim 8.

Cancel claim 1 and replace it with the following:

-- 1. A single-panel color image display apparatus comprising:

a light source emitting light;

a colored light separator having a plurality of dichroic filters of a reflective type separating the light emitted from the light source according to wavelength, and a dichroic filter reflecting a red light beam being disposed lastly among the plurality of dichroic filters;

a scrolling unit having a spirally arranged array of lens cells and obtaining an effect of a linear motion of a lens array due to the rotation of the spiral array of the lens cells so that scrolling operation is performed;
and

a micro display controlling the light separated by the colored light separator

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according to color on a pixel-by-pixel basis according to an input image signal and forming a color image. --

In claim 9, line 1, change "claim 8" to - - claim 1 - -.

In claim 11, line 1, change "claim 8" to - - claim 1 - -.

In claim 12, line 1, change "claim 8" to - - claim 1 - -.

In claim 13, line 1, change "claim 8" to - - claim 1 - -.

Claims 1-7 and 9-19 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art neither shows nor suggests a single-panel color image display apparatus comprising all of the elements of claim 1 and in particular, the combination as follows:

"a colored light separator having a plurality of dichroic filters of a reflective type separating the light emitted from the light source according to wavelength, and a dichroic filter reflecting a red light beam being disposed lastly among the plurality of dichroic filters" and

"a scrolling unit having a spirally arranged array of lens cells and obtaining an effect of a linear motion of a lens array due to the rotation of the spiral array of the lens cells so that scrolling operation is performed".

The prior art neither shows nor suggests a single-panel color image display apparatus comprising all of the elements of claim 16 and particularly:

"a scrolling unit having a spirally arranged array of lens cells and obtaining an effect of a linear motion of a lens array due to a rotation of the spiral array of the lens cells so that scrolling operation is performed, the scrolling unit having a mask at a boundary portion between the lens cells of the scrolling unit, preventing color mixture among colored light beams".

The prior art neither shows nor suggests a single-panel color image display apparatus, comprising all of the elements of claim 17 and in particular, the combination as follows:

"a spiral array of lens cells scrolling the focused light, the lens cells having a mask at a boundary portion between the lens cells;

a colored light separator separating the scrolled light having a plurality of dichroic filters to separate the scrolling light, each of the plurality of dichroic filters reflecting incident light of a different wavelength."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bradley U.S. Patent 5,845,981 teaches a multi-color-band scrolling across single-panel light valve.

Janssen et al. U.S. Patent 6,619,802 B2 teaches a multi-stripe scrolling for color projection.

Hwang U.S. Patent 6,588,906 B2 teaches single-panel color image display apparatus and method thereof.

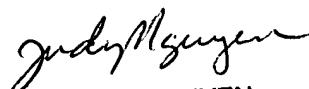
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJK


JUDY NGUYEN
PRIMARY EXAMINER